

# TURCK

## Industrielle Automation

### User Manual

BLCDP-6M12LT-2RFID-A-8DI-PD



***Sense it! Connect it! Bus it! Solve it!***

: 2010-6-18

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## 1 General safety notes

### 1.1 Before the installation

- Disconnect the power supply of the device.
- Ensure that devices cannot be accidentally restarted.
- Verify isolation from the supply
- Earth and short circuit.
- Cover or enclose neighboring units that are live.
- Follow the engineering instructions of the device concerned.
- Only suitably qualified personnel in accordance with EN 50 110-1/-2 (VDE 0 105 Part 100) may work on this device/system.
- Before installation and before touching the device ensure that you are free of electrostatic charge.
- The functional earth (FE) must be connected to the protective earth (PE) or to the potential equalization. The system installer is responsible for implementing this connection.
- Connecting cables and signal lines should be installed so that inductive or capacitive interference do not impair the automation functions.
- Install automation devices and related operating elements in such a way that they are well protected against unintentional operation.
- Suitable safety hardware and software measures should be implemented for the I/O interface so that a line or wire breakage on the signal side does not result in undefined states in the automation devices.
- Ensure a reliable electrical isolation of the low voltage for the 24 volt supply. Only use power supply units complying with IEC 60 364-4-41 (VDE 0 100 Part 410) or HD 384.4.41 S2.
- Deviations of the mains voltage from the rated value must not exceed the tolerance limits given in the specifications, otherwise this may cause malfunction and dangerous operation.
- Emergency stop devices complying with IEC/EN 60 204-1 must be effective in all operating modes of the automation devices. Unlatching the emergency-stop devices must not cause restart.
- Devices that are designed for mounting in housings or control cabinets must only be operated and controlled after they have been installed with the housing closed. Desktop or portable units must only be operated and controlled in enclosed housings.
- Measures should be taken to ensure the proper restart of programs interrupted after a voltage dip or failure. This should not cause dangerous operating states even for a short time. If necessary, emergency stop devices should be implemented.
- Wherever faults in the automation system may cause damage to persons or property, external measures must be implemented to ensure a safe operating state in the event of a fault or malfunction (for example, by means of separate limit switches, mechanical interlocks etc.).
- The electrical installation must be carried out in accordance with the relevant regulations (e. g. with regard to cable cross sections, fuses, PE).
- All work relating to transport, installation, commissioning and maintenance must only be carried out by qualified personnel. (IEC 60 364 and HD 384 and national work safety regulations).
- All shrouds and doors must be kept closed during operation.

## 2 General information

This manual includes all information necessary for the prescribed product. It has been specially conceived for personnel with the necessary qualifications.



### ATTENTION

Please read this section carefully. Safety aspects cannot be left to chance when dealing with electrical equipment.

### 2.1 Description of symbols Used



### WARNING

This sign can be found next to all notes that indicate a source of hazards. This can refer to danger to personnel or damage to the system (hardware and software) and to the facility. This sign means for the operator: work with extreme caution.



### ATTENTION

This sign can be found next to all notes that indicate a potential hazard. This can refer to possible danger to personnel and damages to the system (hardware and software) and to the facility.



### NOTE

This sign can be found next to all general notes that supply important information about one or more operating steps. These specific notes are intended to make operation easier and avoid unnecessary work due to incorrect operation.

### 2.2 Prescribed Use

Appropriate transport, storage, deployment and mounting as well as careful operating and thorough maintenance guarantee the trouble-free and safe operation of these devices.



### WARNING

The devices described in this manual must be used only in applications prescribed in this manual or in the respective technical descriptions, and only with certified components and devices from third party manufacturers.

### 2.3 Notes Concerning Planning /Installation of this Product



### WARNING

All respective safety measures and accident protection guidelines must be considered carefully and without exception.

### 3 Introduction

#### 3.1 BL compact – High signal variety in a compact design

For the first time, BL compact provides a product family of IP67 fieldbus devices that can meet any requirement in the I/O level in terms of signal type and connectivity. Until now, compact fieldbus stations were applied to process only digital fieldbus signals. BL compact now allows a wide range of I/O tasks to be implemented outside of the control cabinet in a compact design with virtually any signal combination.

##### **The basic concept**

With the modular concept of the BL67 system by TURCK a fieldbus node can be installed outside the control cabinet using any signal combination. For this purpose, passive base and active electronic modules are connected to fieldbus gateways which fulfill application specific I/O tasks. Such a fieldbus node can take one gateway with up to 32 extension modules (max. 512 I/O points). For applications with low signal density and limited mounting space, BL compact is an efficient alternative because basically all BL67 I/O signals are also available in BL compact.

##### **The modular principle**

The BL compact devices provide three basic functions in a single housing: Fieldbus connection, I/O signal and connector. Depending on the housing style, one or two I/O modules can be housed. The smaller versions (e.g. M12S and M12MT) can link any BL67 electronic module each to PROFIBUS-DP or DeviceNet™. The bigger versions (e.g. M12LT) have space for two BL67 electronic modules, making the possibilities of signal combination nearly infinite.



#### **NOTE**

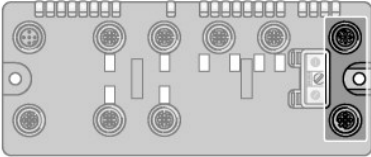
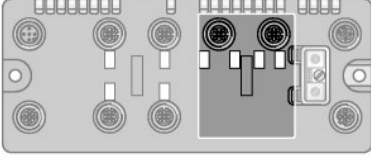
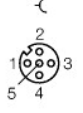
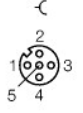
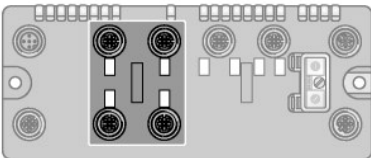
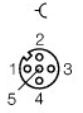
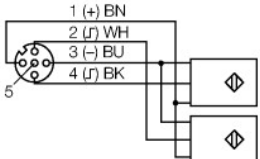
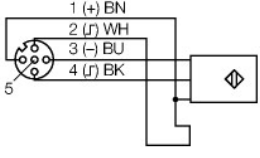
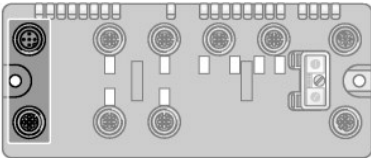
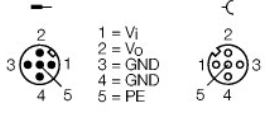
The I/O-system BL compact does not require mounting in an extra housing. It was specially designed for the harsh industrial environment and for direct mounting on the machine and in the process. The system is extremely robust and protected against dirt, dust and the most liquids through its high degree of protection. However, it is not suited for the following applications: high pressure jet cleaning, 100 % humidity, out-door installation or permanent operation in liquids.

## 4 Technical data

|                                   |                                                           |
|-----------------------------------|-----------------------------------------------------------|
| <b>Type</b>                       | BLCDP-6M12LT-2RFID-A-8DI-PD                               |
| Ident-No.                         | 6811173                                                   |
| <b>Supply voltage</b>             | 24 VDC                                                    |
| Admissible range                  | 18...30 VDC                                               |
| System power supply               | via separate source                                       |
| Voltage supply connection         | 2 x M12, 5-pin                                            |
| Operating current                 | 750 mA                                                    |
| Power loss, typical               | ≤ 1 W                                                     |
| Nominal voltage $V_i$             | 24 VDC                                                    |
| Nominal voltage $V_o$             | 24 VDC                                                    |
| Max. sensor supply $I_{sens}$     | 4 A                                                       |
| Max. load current $I_o$           | 4 A                                                       |
| <b>Fieldbus transmission rate</b> | 9.6 kbps up to 12 Mbps                                    |
| Adjustment transmission rate      | auto detection                                            |
| Fieldbus addressing range         | 0...99                                                    |
| Fieldbus addressing               | 2 decimally coded rotary switches                         |
| Service interface                 | RS232 interface                                           |
| Fieldbus connection technology    | 2 x M12, 5-pin, reverse keyed                             |
| Fieldbus termination              | external                                                  |
| <b>Digital inputs</b>             |                                                           |
| Input type                        | pnp                                                       |
| Type of input diagnostics         | channel diagnostics                                       |
| Sensor supply                     | 24 VDC, 100 mA short-circuit limiting                     |
| Low level signal voltage          | < 4.5 VDC                                                 |
| High level signal voltage         | 7... 30 VDC                                               |
| Active level (IC) signal current  | < 1.5 mA                                                  |
| Signal voltage inactive level     | 2.1 ... 3.7 mA                                            |
| Input delay                       | 0.25 or 2.5 ms                                            |
| <b>Technology</b>                 |                                                           |
| Signal type                       | Advanced RFID Interface                                   |
| Number of channels                | 2                                                         |
| Sensor supply                     | 0.5 A per channel, short-circuit proof                    |
| Simultaneity factor               | 1                                                         |
| Cable length                      | 50 m                                                      |
| Electrical isolation              | isolation of electronics and field level via optocouplers |
| <b>Operating temperature</b>      | -40...+70 °C                                              |
| Storage temperature               | -40...+85 °C                                              |
| - up to 20 g (at 10 to 150 Hz)    | For mounting on base plate or machinery                   |
| Protection class                  | IP67                                                      |
| housing material                  | Glass-filled nylon, nickel plated brass connectors        |

## 5 Fieldbus and I/O connections

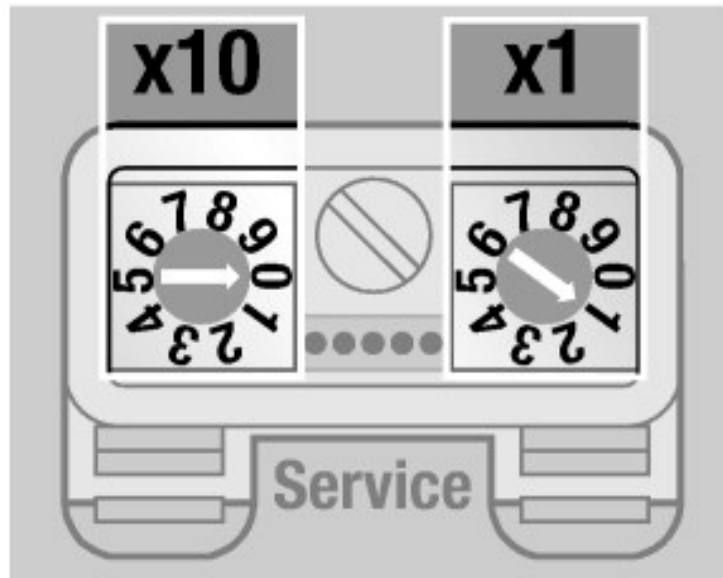
### 5.1 Pinning and wiring diagram

|                                                                                     |                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <b>Fieldbus accessories</b><br>PROFIBUS-DP fieldbus cable (example):<br>RSSW RKSX 455-2M<br>Ident-nr. U0350                                                                                                            | <b>Pin configuration</b><br> <p>           1 = 5 V<br/>           2 = BUS-A<br/>           3 = GND<br/>           4 = BUS-B<br/>           5 = n.c.<br/>           thread = shield         </p>                                                                                                                                                                                                                                                               |
|    | <b>slot 1: RFID</b><br>Matching connection cable (for example):<br>RK4.5T-5-RS4.5T/S2500<br>Ident no. 6699201                                                                                                          | <b>Connector .../S2500</b><br> <p>           1 = BN (+)<br/>           2 = BK (Data)<br/>           3 = BU (GND)<br/>           4 = WH (Data)<br/>           5 = shield         </p> <b>Connector .../S2501</b><br> <p>           1 = BN (+)<br/>           2 = WH (Data)<br/>           3 = BU (GND)<br/>           4 = BK (Data)<br/>           5 = shield         </p> |
|  | <b>slot 2: digital inputs</b><br>If the wire-break monitoring has been activated, on the sensor side a jumper between pin 1 (24 V DC) and pin 2 (diagnostics input) must be implemented for monitoring of wire-breaks. | <b>Pin configuration</b><br> <p>           1 = V<sub>SENS</sub><br/>           2 = Input B<br/>           3 = GND<br/>           4 = Input A<br/>           5 = PE         </p> <b>Wiring diagram</b><br> <b>Wiring diagram</b><br>                                               |
|  | <b>Voltage supply</b>                                                                                                                                                                                                  | <b>Pin configuration</b><br> <p>           1 = V<sub>I</sub><br/>           2 = V<sub>O</sub><br/>           3 = GND<br/>           4 = GND<br/>           5 = PE         </p>                                                                                                                                                                                                                                                                              |

## 6 Commissioning

### 6.1 Address setting

The PROFIBUS-DP address setting at the module is done via the two decimal rotary coding switches under the protective cover. A maximum of 100 addresses (00 to 99) can be allocated. Each address may be allocated only once in the entire bus structure. The bus address 00 must not be allocated.



### 6.2 Setting the transmission rate

The module provides automatic transmission rate detection.

All new settings become valid only after a power-cycle!

### 6.3 Field bus termination

If the module is used as the first or the last station in the bus communication, the field-bus line has to be terminated using a terminating resistor.

The module offers no internal bus terminating resistor. The termination has to be done externally.

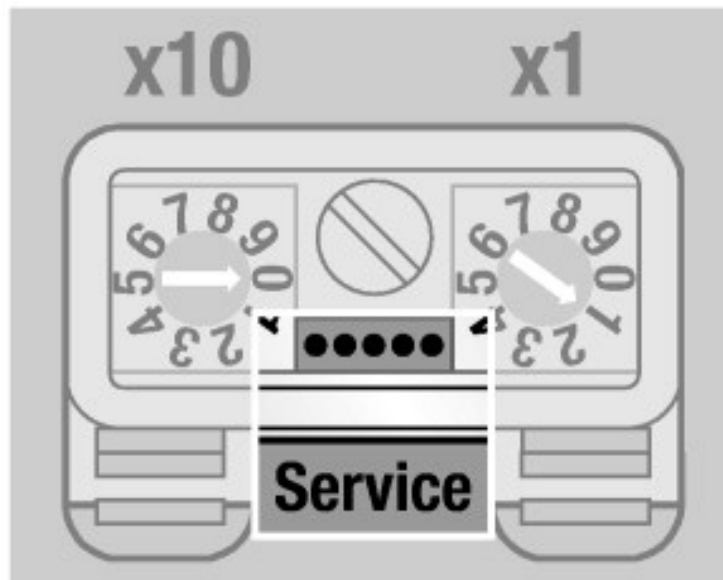
Passive terminating resistor,  
RSS4.5-PDP-TR, Ident-no.: 66001590

Active terminating resistor,  
PDP-TRA, Ident-no.: 6825346

## 6 Commissioning

### 6.4 Service interface

In order to connect the service interface on the module with a PC and the I/O-ASSISTANT software (project planning and diagnostics software), a cable with a pin assignment, different from the PS2 standard pin assignment, has to be used.



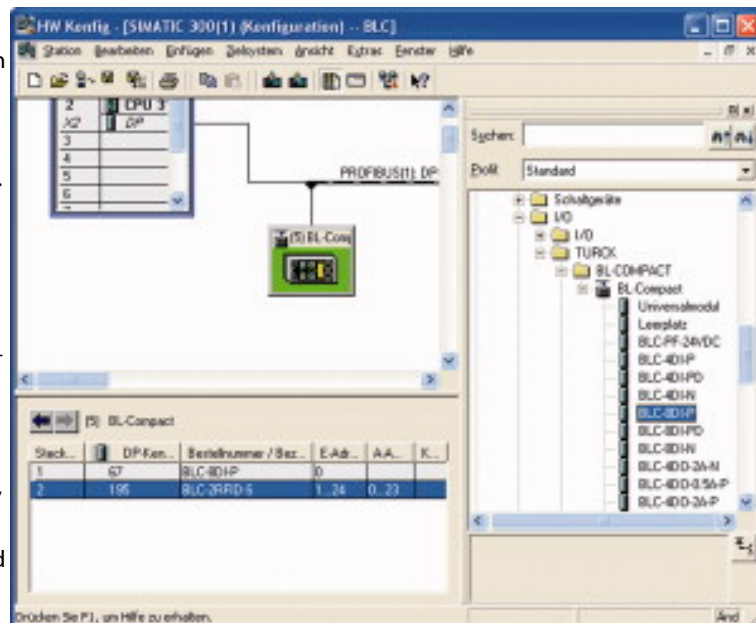
### 6.5 PLC configuration

TURCK provides a GSD-file for the integration of BL compact into PROFIBUS-DP.

#### Commissioning in a configuration tool

Install the GSD-file in the PLC configuration tool eg. in "Step 7/ HWConfig" from Siemens. After the installation, the BL compact stations can be found under "Additional Field Devices #> I/O #> TURCK #> BL COMPACT". BL compact modules are shown as modular slaves with a PROFIBUS-DP-gateway and a maximum of 2 I/O-slots which have to be defined according to the module used in the application.

Doubleclick the BL compact folder and add an "empty" BLCDP-module to the PROFIBUS-DP line. Now select the required I/O-functions and add them to the station. The BL compact GSD-file can be downloaded from [www.turck.com](http://www.turck.com).



### NOTE

For more detailed information about the PLC-configuration of TURCK PROFIBUS-DP-products, please read for example the respective BL67 manual D300570.pdf which can be downloaded from [www.turck.com](http://www.turck.com).

## 7 The I/O-ASSISTANT

The configuration software I/O-ASSISTANT supports you in planning and implementation of an I/O system.

No matter if you are online or offline, the software simplifies the configuration and parameterization of the modules. The I/O-ASSISTANT is also extremely helpful in system set-up and testing.

### 7.1 FDT/DTM

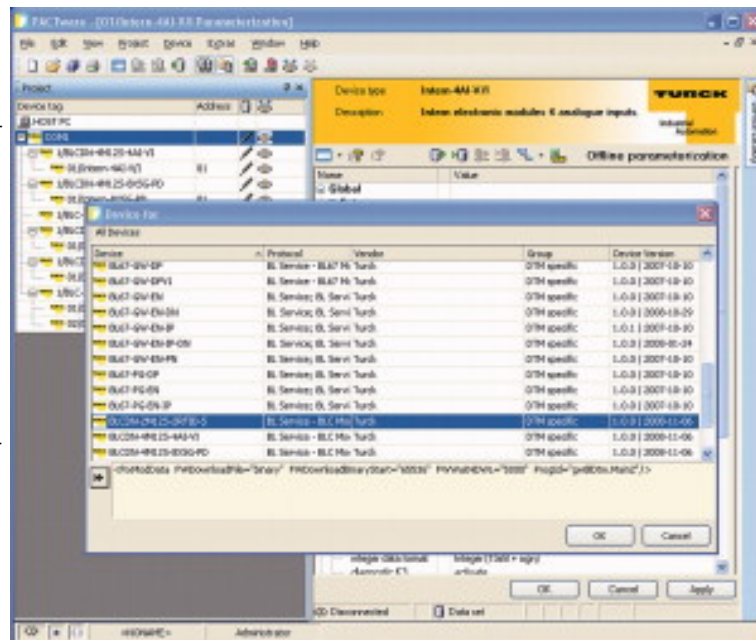
The system configuration, parameterization and diagnostics are done via graphical interfaces based on FDT/DTM technology.

The DTM's can be integrated in any FDT frame application for configuration, commissioning and maintenance.

The I/O-ASSISTANT and the DTM's are available free of charge on [www.turck.com](http://www.turck.com).

#### Software functions

- Supporting software tool
- Configuration, parameterization and commissioning of BL Compact modules via a DTM-technology
- Import of BL Compact DTM-files
- Offline planning and configuration of BL67, BL20 and BL compact I/O modules
- Reading and setting of process data
- Commissioning help for testing the wiring and sensors without PLC
- Automatic documentation of configured TURCK-systems



## 8 LED description

### 8.1 Station LED status

| LED | Color | Status          | Description                                         |
|-----|-------|-----------------|-----------------------------------------------------|
| IOs |       | OFF             | No power                                            |
|     | RED   | ON              | Low power or station error                          |
|     | RED   | FLASHING (1 Hz) | I/O module configuration error                      |
|     | RED   | FLASHING (4 Hz) | No I/O module bus communication                     |
|     | GREEN | ON              | Station ok                                          |
|     | GREEN | FLASHING        | Force mode active                                   |
| DIA |       | OFF             | Station sends no diagnostics                        |
|     | RED   | ON              | Station sends static diagnostics                    |
|     | RED   | FLASHING        | Station sends extended diagnostics                  |
| BUS |       | OFF             | No field bus communication                          |
|     | GREEN | ON              | Field bus communication active                      |
|     | GREEN | FLASHING (1 Hz) | No field bus communication active, device status OK |
|     | RED   | ON              | Bus error at the gateway; no data exchange          |
|     | RED   | FLASHING        | Faulty PROFIBUS-DP address                          |
|     |       |                 |                                                     |

### 8.2 I/O LED status slot 1

| LED       | Color | Status           | Description                                     |
|-----------|-------|------------------|-------------------------------------------------|
| D1 *      |       | OFF              | No diagnostics active                           |
|           | RED   | ON               | Station error/ module bus communication failure |
|           | RED   | FLASHING (0.5Hz) | Any diagnostics active                          |
| RW0 / RW1 |       | OFF              | No tag present, no diagnostics active           |
|           | GREEN | ON               | Tag present                                     |
|           | GREEN | FLASHING (2 Hz)  | Data communication from / to tag active         |
|           | RED   | ON               | Error in the R/W head                           |
|           | RED   | FLASHING (2 Hz)  | Short circuit in the transceiver supply         |
|           |       |                  |                                                 |

\* D1 LED also reports gateway diagnostics

### 8.3 I/O LED status slot 2

| LED                  | Color | Status           | Description                                         |
|----------------------|-------|------------------|-----------------------------------------------------|
| D2 *                 |       | OFF              | No diagnostics active                               |
|                      | RED   | ON               | Station error/ module bus communication failure     |
|                      | RED   | FLASHING (0.5Hz) | Any diagnostics active                              |
| DI channels<br>0...7 |       | OFF              | Input status x= "0" (OFF),<br>no diagnostics active |
|                      | GREEN | ON               | Input status x = "1" (ON)                           |
|                      | RED   | ON               | Wire-break monitoring active (LED 0 to 3)           |
|                      | RED   | FLASHING (2 Hz)  | Overload sensor supply                              |
|                      |       |                  |                                                     |

\* D2 LED also reports gateway diagnostics

## 9 Mapping and diagnostics

### 9.1 I/O Data mapping

| INPUT | BYTE | Bit 7                             | Bit 6             | Bit 5             | Bit 4             | Bit 3             | Bit 2             | Bit 1             | Bit 0             |
|-------|------|-----------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| RFID  | 0    | Status word channel 0 - low byte  |                   |                   |                   |                   |                   |                   |                   |
|       | 1    | Status word channel 0 - high byte |                   |                   |                   |                   |                   |                   |                   |
|       | 2    | Status word channel 1 - low byte  |                   |                   |                   |                   |                   |                   |                   |
|       | 3    | Status word channel 1 - high byte |                   |                   |                   |                   |                   |                   |                   |
| DI    | 4    | DI 2 <sub>7</sub>                 | DI 2 <sub>6</sub> | DI 2 <sub>5</sub> | DI 2 <sub>4</sub> | DI 2 <sub>3</sub> | DI 2 <sub>2</sub> | DI 2 <sub>1</sub> | DI 2 <sub>0</sub> |
|       | 5    | -                                 | -                 | -                 | -                 | -                 | -                 | -                 | -                 |

| OUTPUT | BYTE | Bit 7                             | Bit 6 | Bit 5 | Bit 4 | Bit 3 | Bit 2 | Bit 1 | Bit 0 |
|--------|------|-----------------------------------|-------|-------|-------|-------|-------|-------|-------|
| RFID   | 0    | Control word channel 0- low byte  |       |       |       |       |       |       |       |
|        | 1    | Control word channel 0- high byte |       |       |       |       |       |       |       |
|        | 2    | Control word channel 1- low byte  |       |       |       |       |       |       |       |
|        | 3    | Control word channel 1- high byte |       |       |       |       |       |       |       |

The BLident RFID-A interface modules cannot be controlled simply via the process data. A software function block in the PLC is required in every case. The function block is standardized for RFID systems and is called Proxy Ident Block or abbreviated as PIB. Such a function block is available for the S7 PLC systems.

For this reason, the process data is not described in more detail here. The function block provides all the necessary control and status variables. Further information about the handling of process data in the PIB can be found in the BLident-manual D101579 "Set-up in PROFIBUS-DP".

### 9.2 RFID-S - Diagnostic messages DPV1

| Error code no. | Meaning                                                                                                                                          |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| 2              | undervoltage                                                                                                                                     |
| 4              | overload                                                                                                                                         |
| 21             | hardware failure<br>The module detected a hardware failure. Exchange the module.                                                                 |
| 22             | Communication failure<br>The module detected a communication problem at its ports. Check the connection or the function of the attached devices. |

### 9.3 8DI-PD - Diagnostic messages DPV1

| Error code no. | Meaning                                                                      |
|----------------|------------------------------------------------------------------------------|
| 6              | line break                                                                   |
| 26             | Sensor supply load dump<br>The module detected a load dump at sensor supply. |

## 10 Parameters

### 10.1 PROFIBUS-DP Parameter

| Parameter                                   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| startup when expected/actual config. differ | <p>0 = activated *)<br/>Reaction depending on the parameter „Bit 6: Static configuration“. If the static configuration is deactivated, the process data exchange is not disturbed in case of module sequence error.</p> <p>1 = deactivated<br/>Reaction depending on the parameter „Bit 6: Static configuration“. If the static configuration is activated, the process data exchange is not disturbed in case of module sequence error.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| static configuration                        | <p>0 = activate *)<br/>Changes in the station configuration are stored in the gateway following a power-on.</p> <p>1 = deactivate<br/>If the static configuration is deactivated, a dynamic configuration take-over is realized directly following station configuration changes (important for acyclic parameterization). The station stops the process data exchange and the bus communication as soon as a module sequence error appears, ignoring the parameterization for error handling. But, the communication is not interrupted, if the gateway-parameter byte 1, bit 0 "startup.</p>                                                                                                                                                                                                                                                                                                                                                                                          |
| outputs fieldbus error                      | <p>0 = output 0 *)<br/>The gateway switches the outputs of the modules to "0". No error information is transmitted.</p> <p>1 = output substitute value<br/>The gateway switches the outputs of all modules (with the exception of analog output modules) to "0". Error information is transmitted to the analog output modules. Depending on their configuration, these modules set their outputs either to "0" or to a default value, or maintain the original values. The non-configured analog output modules set their outputs to "0".</p> <p>2 = hold current value<br/>The gateway maintains the actual output settings of all modules (with the exception of analog output modules). Error information is transmitted to the analog output modules. Depending on their configuration, these modules set their outputs either to "0" or to a default value, or maintain the original values. The non-configured analog output modules maintain their current output settings.</p> |
| outputs mod. sequence error                 | <p>0 to 2, see above "outputs fieldbus error"</p> <p>3 = Exchange process data<br/>The gateway carries on exchanging process data with the other module bus stations. No error information is transmitted.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| outputs mod. sequence error                 | 0 to 3, see above "outputs mod. sequence error"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| integer data format                         | <p>0 = LSB first *)<br/>Data is converted to INTEL format (standard format).</p> <p>1 = MSB first<br/>16-bit data are transmitted with the high and low bytes reversed (MOTOROLA format). This parameter influences the process data!</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| diagnostics from modules                    | <p>0 = activate *)<br/>Diagnostic messages from the module bus stations are made known to the fieldbus master as extended diagnostics.</p> <p>1 = deactivate<br/>Diagnostic messages from the module bus stations will not be displayed. A station diagnostic is not automatically generated along with module diagnostics.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

## 10 Parameters

| Parameter                | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Vo diagnostics           | <p>0 = activate *)</p> <p>The monitoring function for the field supply Vo (from gateway and power feeding modules) is activated. If this parameter is set but the parameter "Diagnostics from modules" (see above) deactivated, then only the voltage supply at the gateway is monitored. A monitoring of the voltage supply at the power feeding module is not realized.</p> <p>1 = deactivate</p> <p>A possible over- or undervoltage at UL will not be detected.</p> |
| I/O-ASSISTANT Force Mode | <p>0 = release *)</p> <p>I/O-ASSISTANT can set the force mode.</p> <p>1 = block</p> <p>I/O-ASSISTANT cannot set the force mode, if the station was parameterized by the DP master.</p>                                                                                                                                                                                                                                                                                  |

\*) = default setting

### 10.2 RFID-A Parameters

The BL ident channels are provided with a suitable parameterization by means of a current GSD-file. Changes in the parameterization by the customer are not necessary.

### 10.3 8DI-PD - Parameters

| Parameter              | Description                                                                                                                                                                                          |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| digital input x        | <p>The input signal is inverted.</p> <p>0 = normal *)</p> <p>1 = inverted</p>                                                                                                                        |
| input filter           | <p>Sets the input filter from 0.25 ms to 2.5 ms.</p> <p>0 = deactivate *)</p> <p>1 = activate</p>                                                                                                    |
| operation mode group x | <p>Groupwise open circuit monitoring:</p> <p>Group A (ch. 0 and 4)</p> <p>Group B (ch. 1 and 5)</p> <p>Group C (ch. 2 and 6)</p> <p>Group D (ch. 3 and 7)</p> <p>0 = normal *)</p> <p>1 = DESINA</p> |

\*) default setting